

*Health Matters*

National Institute of Allergy and Infectious Diseases  
National Institutes of Health  
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

December 2004

## The Common Cold

### OVERVIEW

Sneezing, scratchy throat, runny nose-everyone knows the first signs of a cold, probably the most common illness known. Although the common cold is usually mild, with symptoms lasting 1 to 2 weeks, it is a leading cause of doctor visits and missed days from school and work. According to the Centers for Disease Control and Prevention, 22 million school days are lost annually in the United States due to the common cold.

In the course of a year, people in the United States suffer 1 billion colds, according to some estimates.

Children have about 6 to 10 colds a year. One important reason why colds are so common in children is because they are often in close contact with each other in daycare centers and schools. In families with children in school, the number of colds per child can be as high as 12 a year. Adults average about 2 to 4 colds a year, although the range varies widely. Women, especially those aged 20 to 30 years, have more colds than men, possibly because of their closer contact with children. On average, people older than 60 have fewer than one cold a year.

### CAUSES

#### *The Viruses*

More than 200 different viruses are known to cause the symptoms of the common cold. Some, such as the rhinoviruses, seldom produce serious illnesses. Others, such as parainfluenza and respiratory syncytial virus, produce mild infections in adults but can precipitate severe lower respiratory infections in young children.

Rhinoviruses (from the Greek *rhin*, meaning "nose") cause an estimated 30 to 35 percent of all adult colds, and are most active in early fall, spring, and summer. More than 110 distinct rhinovirus types have been identified. These agents grow best at temperatures of about 91 degrees Fahrenheit, the temperature inside the human nose.

Scientists think coronaviruses cause a large percentage of all adult colds. They bring on colds primarily in the winter and early spring. Of the more than 30 kinds, three or four infect humans. The importance of coronaviruses as a cause of colds is hard to assess because, unlike rhinoviruses, they are difficult to grow in the

laboratory.

Approximately 10 to 15 percent of adult colds are caused by viruses also responsible for other, more severe illnesses: adenoviruses, coxsackieviruses, echoviruses, orthomyxoviruses (including influenza A and B viruses, which cause flu), paramyxoviruses (including several parainfluenza viruses), respiratory syncytial virus, and enteroviruses.

The causes of 30 to 50 percent of adult colds, presumed to be viral, remain unidentified. The same viruses that produce colds in adults appear to cause colds in children. The relative importance of various viruses in pediatric colds, however, is unclear because it's difficult to isolate the precise cause of symptoms in studies of children with colds.

### ***The weather***

There is no evidence that you can get a cold from exposure to cold weather or from getting chilled or overheated.

### ***Other factors***

There is also no evidence that your chances of getting a cold are related to factors such as exercise, diet, or enlarged tonsils or adenoids. On the other hand, research suggests that psychological stress and allergic diseases affecting your nose or throat may have an impact on your chances of getting infected by cold viruses.

## **THE COLD SEASON**

In the United States, most colds occur during the fall and winter. Beginning in late August or early September, the rate of colds increases slowly for a few weeks and remains high until March or April, when it declines. The seasonal variation may relate to the opening of schools and to cold weather, which prompt people to spend more time indoors and increase the chances that viruses will spread to you from someone else.

Seasonal changes in relative humidity also may affect the prevalence of colds. The most common cold-causing viruses survive better when humidity is low—the colder months of the year. Cold weather also may make the inside lining of your nose drier and more vulnerable to viral infection.

## **SYMPTOMS**

Symptoms of the common cold usually begin 2 to 3 days after infection and often include

- Mucus buildup in your nose
- Difficulty breathing through your nose
- Swelling of your sinuses
- Sneezing

- Sore throat
- Cough
- Headache

Fever is usually slight but can climb to 102 degrees Fahrenheit in infants and young children. Cold symptoms can last from 2 to 14 days, but like most people, you'll probably recover in a week. If symptoms occur often or last much longer than 2 weeks, you might have an allergy rather than a cold.

Colds occasionally can lead to bacterial infections of your middle ear or sinuses, requiring treatment with antibiotics. High fever, significantly swollen glands, severe sinus pain, and a cough that produces mucus, may indicate a complication or more serious illness requiring a visit to your healthcare provider.

## TRANSMISSION

You can get infected by cold viruses by either of these methods.

- Touching your skin or environmental surfaces, such as telephones and stair rails, that have cold germs on them and then touching your eyes or nose
- Inhaling drops of mucus full of cold germs from the air

## TREATMENT

There is no cure for the common cold, but you can get relief from your cold symptoms by

- Resting in bed
- Drinking plenty of fluids
- Gargling with warm salt water or using throat sprays or lozenges for a scratchy or sore throat
- Using petroleum jelly for a raw nose
- Taking aspirin or acetaminophen, Tylenol, for example, for headache or fever

**A word of caution:** Several studies have linked aspirin use to the development of Reye's syndrome in children recovering from flu or chickenpox. Reye's syndrome is a rare but serious illness that usually occurs in children between the ages of 3 and 12 years. It can affect all organs of the body but most often the brain and liver. While most children who survive an episode of Reye's syndrome do not suffer any lasting consequences, the illness can lead to permanent brain damage or death. The American Academy of Pediatrics recommends children and teenagers not be given aspirin or medicine containing aspirin when they have any viral illness such as the common cold.

### ***Over-the-counter cold medicines***

Nonprescription cold remedies, including decongestants and cough suppressants, may relieve some of your cold symptoms but will not prevent or even shorten the length of your cold. Moreover, because most of these medicines have some side

effects, such as drowsiness, dizziness, insomnia, or upset stomach, you should take them with care.

### ***Over-the counter-antihistamines***

Nonprescription antihistamines may give you some relief from symptoms such as runny nose and watery eyes which are commonly associated with colds.

### ***Antibiotics***

Never take antibiotics to treat a cold because antibiotics do not kill viruses. You should use these prescription medicines only if you have a rare bacterial complication, such as sinusitis or ear infections. In addition, you should not use antibiotics "just in case" because they will not prevent bacterial infections.

### ***Steam***

Although inhaling steam may temporarily relieve symptoms of congestion, health experts have found that this approach is not an effective treatment.

## **PREVENTION**

There are several ways you can keep yourself from getting a cold or passing one on to others.

- Because cold germs on your hands can easily enter through your eyes and nose, keep your hands away from those areas of your body
- If possible, avoid being close to people who have colds
- If you have a cold, avoid being close to people
- If you sneeze or cough, cover your nose or mouth.

### ***Handwashing***

Handwashing with soap and water is the simplest and one of the most effective ways to keep from getting colds or giving them to others. During cold season, you should wash your hands often and teach your children to do the same. When water isn't available, CDC recommends using alcohol-based products made for washing hands.

### ***Disinfecting***

Rhinoviruses can live up to 3 hours on your skin. They also can survive up to 3 hours on objects such as telephones and stair railings. Cleaning environmental surfaces with a virus-killing disinfectant might help prevent spread of infection.

### ***Vaccine***

Because so many different viruses can cause the common cold, the outlook for developing a vaccine that will prevent transmission of all of them is dim. Scientists,

however, continue to search for a solution to this problem.

### ***Unproven prevention methods***

#### **Echinacea**

Echinacea is a dietary herbal supplement that some people use to treat their colds. Researchers, however, have found that while the herb may help treat your colds if taken in the early stages, it will not help prevent them.

One research study funded by the National Center for Complementary and Alternative Medicine, a part of the National Institutes of Health, found that echinacea is not effective at all in treating children aged 2 to 11.

#### **Vitamin C**

Many people are convinced that taking large quantities of vitamin C will prevent colds or relieve symptoms. To test this theory, several large-scale, controlled studies involving children and adults have been conducted. To date, no conclusive data has shown that large doses of vitamin C prevent colds. The vitamin may reduce the severity or duration of symptoms, but there is no clear evidence.

Taking vitamin C over long periods of time in large amounts may be harmful. Too much vitamin C can cause severe diarrhea, a particular danger for elderly people and small children.

## **RESEARCH**

Thanks to basic research, scientists know more about the rhinovirus than almost any other virus, and have powerful new tools for developing antiviral drugs. Although the common cold may never be uncommon, further investigations offer the hope of reducing the huge burden of this universal problem.

### ***Research on rhinovirus transmission***

Much of the research on the transmission of the common cold has been done with rhinoviruses, which are shed in the highest concentration in nasal secretions. Studies suggest a person is most likely to transmit rhinoviruses in the second to fourth day of infection, when the amount of virus in nasal secretions is highest.

Researchers also have shown that using aspirin to treat colds increases the amount of virus in nasal secretions, possibly making the cold sufferer more of a hazard to others.

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*Last Updated December 13, 2004 (alt)*